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Accelerated Decision Making, Data Integration and Software Development using a Service Oriented Architecture Foundation (SOAF)

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The Army IT Enterprise is a complex mix of commercial and tactical systems dispersed and often moving around the world.

- Distributed Geographically
- Siloed Tactical Systems
- Non-Standard Solutions

Additionally, these systems must operate and be secured on a scale most organizations would never even consider:

- Active Duty : 621,000*
- Reserve Duty : 549,000*
- Tactical Systems : 37**
- Business Systems : 237**
- Support Systems : 215**
- Intel Systems : 13**

*Source: www.siadapp.dmdc.osd.mil/personnel
**Source: www.whitehouse.gov/omb/budget/supplemental
Enterprise level integration projects face a number of challenges which hamper system integration results.

**IT Challenges**

- **Siloed Systems**
- **Lengthy Acquisition Process**
- **Unrelated Data Reports**

**Warfighter Consequences**

- **Siloed Systems - Force Manual Integrations**
- **Lengthy IT Dev Process – Limits rapid operational adaption**
- **Un-Related Data Reports – Force manual analysis**

Source: https://acc.dau.mil/IFC/download_pdf.htm

Accelerated Decision Making, Data Integration and Software Development using a Service Oriented Architecture Foundation

Kevin M. Brown, Michael Galkovsky
SOA Foundation solution was created in order to accelerate SOA adoption

The SOA Foundation (SOAF) was created to address the following goals:

• Demonstrate warfighter utility
• Federate SOA efforts within the Army and DoD
• Provide a transformation solution for information integration

The SOAF solution utilizes and helps implement SOA standards, application programming interfaces (APIs) and governance process to:

• Ensure conformance with DoD guidance and standards
• Ensure discoverability, accessibility and security
• Provide documentation that supports Enterprise Acquisition
• Achieve maximum re-use and agility (Type Accredited Solution)

The SOAF solution provide a SOA framework to examine policy, architecture, network, and deployment issues
The SOAF solution provides the ability to address both IT challenges and Warfighter needs.
The SOAF favors visionary over traditional development values

The SOAF development approach focuses on being:

- focused on Warfighter Value
- focused on Strategic Goals
- standards based
- scalable
- modular

We understand traditional values but embrace agility, mission benefits and intrinsic interoperability which encourages organizations to reward information sharing.
The SOA Foundation provides all the components essential for scalable enterprise SOA solution.
Warfighters invest in IT solutions to quickly answer mission critical questions

Typical Mission Questions:

What is my maintenance status?

Will I be ready for the next mission?

How many staff do I have?

Do I have the right staff mix?

How does the SOAF solution ensure our IT solutions address these and future questions?

~ By focusing on problems between the seams ~
SOA Example #1 - SOA enabling systems shortens the time required to determine a maintenance Status

**Current Process**

6 Hours the answer is:
- the vehicles are up - as of yesterday.

**SOA Enabled Process**

After 2 Hours the answer is:
- 73% of the vehicles are up, right now;
- 10% are down due to tire damage,
- mechanics are on site
- parts will arrive tomorrow.
Example #1: SOA enabled integration automates data analysis significantly improving situational awareness for warfighters.
Example #1: The SOA enabled dashboard significantly reduces the time it takes to determine a Division’s maintenance status.

**Current Process**

**Resources Required for a Status:**
- Soldiers (over 4 Companies)
- Hand made summaries

**Steps:**
- 5 Steps

**Roles:**
- 3 Roles

**Data formats:**
- 1 Data format

**HOURS to complete:**
- 2 HOURS

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**SOA Integrated Process**

**Resources Required for a Status:**
- 6 Soldiers (over 4 Companies)
- 0 Hand made summaries
- 5 Steps
- 3 Roles
- 1 Data format
- 2 HOURS

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**Roles:**
- Task Force Commander
- Battalion Commander
- Company Commander
- XO
- Mechanic
- SME Clerk
Example #2: Army Reports generated by Excel and briefed in PPT require considerable staff time

### Representative Data
Sample used for Briefing Leadership
Example #2: A SOA enabled dashboard significantly reduces the time required to collect and report staffing information.
Example #2: The SOA enabled dashboard significantly reduces the time required to collect and report Staffing information.

**Current Process**

- Resources Required for a Status:
  - Soldiers
  - Hand made summaries
- Steps
  - Data formats
- Days to complete: 1

**SOA Integrated Process**

- Resources Required for a Status:
  - 36 Soldiers
  - 0 Hand made summaries
  - 8 Steps
  - 1 Data format
  - 1 DAY to complete
Lesson Learned – The current acquisition and PM processes do not support net-centric or SOA solutions

By changing the metrics for success from purely internal measures to include external measures of success there will be incentives to support the DoD Net-Centric Guidance and Data Sharing Initiatives.
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